

Deciding When Rotator Cuff Surgery Must Be Redone

Surgeons everywhere are grappling with the fact that rotator cuff repairs aren't always successful. In this review article, surgeons from the well-known San Antonio Orthopaedic Group in Texas discuss the causes of arthroscopic rotator cuff repair failure and how to decide when revision surgery is advised.

Using drawings, patient photos, written descriptions, and arthroscopic views, the authors cover a wide range of information about arthroscopic rotator cuff repair revision procedures. They include a discussion of intrinsic (patient-related) and extrinsic (surgeon-controlled) causes of failure. They also offer ways to evaluate patients in making the decision to do a revision repair. A detailed description of the arthroscopic technique they use is provided.

Most patients suffering from a rotator cuff repair failure want to know why this happened to them. Let's take a look at causes of failure from both the patient and surgeon side of the equation. The two top factors that put patients at increased risk of rotator cuff repair failure are age and tear size.

Increasing age starting at age 55 has been shown to be a key factor in repair re-tears. Studies show that the rate of healing in patients younger than 55 years of age is around 95 per cent. This declines to 75 per cent for patients between the ages of 55 and 64. The rate of healing takes another nose dive down to 43 per cent in patients 65 and older.

Tear size can also be matched with risk of re-tear centimeter by centimeter. For example, for every one centimeter increase in tear size, the risk of rotator cuff failure goes up more than two times. With more than one tendon involved, the risk of re-tear increases nine times.

Other patient-related factors include poor quality of tendon or muscle, smoking, and the patient's overall health. Patients with chronic systemic conditions like rheumatoid arthritis, heart disease, or diabetes are more likely to experience re-tear after rotator cuff repair.

The role of the surgeon in rotator cuff success is important, too. Low volume (i.e., the surgeon doesn't do very many of these procedures) has been linked with a higher failure rate. Studies place the number performed to qualify for low volume as fewer than three rotator cuff repairs per month. High volume (the surgeon performs more than three rotator cuff tear repairs each month) increases the likelihood of a good result.

Surgical technique is also important. The surgeon must accurately assess each patient for the best repair approach. The technique selected depends on whether the repair is for a single tendon (versus multiple tendons), full-thickness versus partial-thickness tears, and tear pattern. Tear pattern refers to the shape of the tear (U-shaped or L-shaped).

Then there is the decision to repair a rotator cuff failed surgery. Not everyone with a re-tear even knows the tendon has come undone. Sometimes the patient is completely asymptomatic (without symptoms). There is no pain and weakness or loss of function are not significant enough to report.

And the presence of pain and loss of motion doesn't always signal a failed surgery. There could be some other complication such as infection or systemic disease referring pain to the shoulder. A careful evaluation is needed to sort out the cause of shoulder pain and need for further surgery. The surgeon performs various clinical tests, orders imaging studies, and considers the need for electrodiagnostic testing.

Revision surgery is only needed when the patient continues to have chronic pain months to years after the original surgery and the problem has been diagnosed as rotator cuff repair failure. All efforts to treat the problem conservatively (without surgery) have failed to change the picture for the patient. And (very importantly), the patient does not have multiple risk factors for failure.

Patients should be counseled before having a revision surgery for failed rotator cuff repair. They should be told that the results are likely not going to be as good as with a successful first repair procedure. But the improvements in pain, motion, and function will probably be better than without the revision surgery. Recovery and rehabilitation are likely going to take longer after a revision surgery compared with the primary (first) repair.

This information is based on evidence from many studies reporting final outcomes following rotator cuff revision surgery. Surgeons report a 64 per cent good-to-excellent result with a 93 per cent patient satisfaction rate following arthroscopic revision rotator cuff repairs.

All is not lost if a patient experiences a poor or failed result after rotator cuff repair surgery. Massive tears with poor recovery may be treated with a shoulder replacement procedure. But the hope and goal of primary and/or revision rotator cuff repair surgery is to preserve the patient's natural anatomy and function.

Reference: Patrick J. Denard, MD, and Stephen S. Burkhart, MD. Arthroscopic Revision Rotator Cuff Repair. In *Journal of the American Academy of Orthopaedic Surgeons*. November 2011. Vol. 19. No. 11. Pp. 657-666.